Commodity Highlight

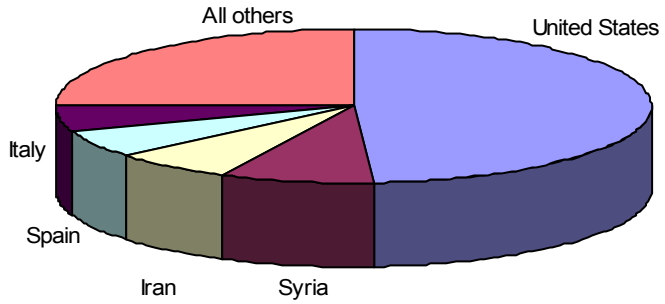
U.S. Almond Industry: The Biggest in the World

The United States is the world's leading producer of almonds, with almost all the production concentrated in California's San Joaquin and Sacramento Valleys. California became the largest almond producer in the late seventies, out producing Spain for the first time in 1977. Following heavy plantings in the late seventies to early eighties, California's production continued to grow rapidly, increasing an average of 23 percent annually throughout the eighties as the trees planted during the seventies became commercially productive. While continuing to grow, although at a slower pace in the nineties and early 2000s, California's crop accounted for almost half the world's production in 2004 (fig. 6).

Although it is the leading producer, the United States has fewer acres in almond production than Spain and Tunisia (fig. 7). U.S. acreage has higher yields than either of these countries, likely due to higher tree density per acre among its recent plantings. U.S. yields, however, are not as high as some traditional almond producers, such as Syria and the United Arab Emirate.

Figure 6

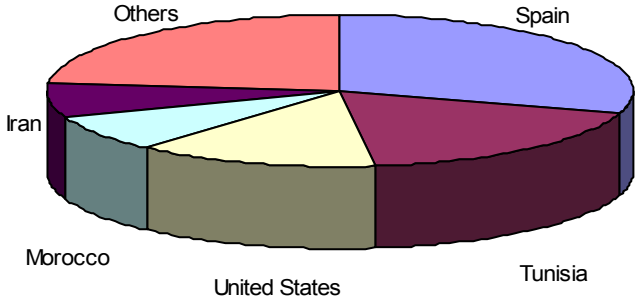
World almond production, by country, 2004



Source: Food and Agriculture Organization, United Nations.

Figure 7

Land in almond production, area harvested, by country, 2004



Source: Food and Agriculture Organization, United Nations.

Almonds Are Member of the Stone Fruit Family

The almond belongs to the same plant family as stone fruit: peach, plum, nectarine, apricot, and cherry. It is native to western Asia and is adapted to the warmer areas of Mediterranean countries and western United States. California accounts for over 99 percent of almond production in the United States. Production is concentrated in the San Joaquin Valley and around Sacramento. Kern, Merced, Stanislaus, and Fresno counties account for 62 percent of California's acreage planted to almonds.

The trees, like many fruit and nut trees are alternate bearing, meaning they produce a heavy crop one year followed by a lighter crop the following year as the nutrient levels of the trees are replenished. Almond trees are not self-pollinating. As a result, at least two different varieties are necessary in a productive orchard and dependent on bees for pollination. It takes 6 to 8 months from full bloom until nut maturity.

While there are numerous varieties of almonds, the most popular in California are the Nonpareil, Carmel, and Butte. In 2004, the Nonpareil accounted for 38 percent of the planted almond acreage; the Carmel variety accounted for 17 percent, and the Butte accounted for 11 percent. Commercial use of the varieties may vary as some are more suitable than others for different manufactured products such as blanching, paste, and flour.

Structure of the Almond Industry Changing

The 2002 Census of Agriculture shows the structure of the almond industry changing from 1997, when the last Census was conducted. In 2002, the Census reported that 6,482 farms grew almonds in the United States, of which 6,391 farms are located in California. In 1997, there were 6,911 farms with almond production, 6,879 in California. Because California dominates the industry, the emphasis of the analysis will reflect California's industry.

In 2002, 61 percent of the farms growing almonds had less than 50 acres in the crop, down from 68 percent in 1997. The number of farms with fewer than 50 acres declined over this period, while the number with 100 or more acres increased. The number of farms having 750 to under 1,000 acres grew the fastest during this period, indicating that while there are fewer farms growing almonds in 2002 than in 1997, those existing in 2002 are larger.

Most almond farms are individually or family owned. Only 8 percent of the farms were corporations and most of those were family held. Farming was the major occupation of the primary operator on the average almond farm. Less than a third of the operators depended on an occupation other than farming. Regardless of their primary occupation, the typical primary operator of an almond farm was over 45 years old. Over half the operators were 55 and over, with slightly over one-quarter at least 65 years old. The heavy concentration of older farmers in the almond industry is likely to have a strong affect on the industry's structure in the next 5 to 10 years.

While the Number of Farms Have Decreased, the Number of Almond Handlers Grew

Although there were 7 percent fewer farms growing almonds in 2002 than in 1997, the number of handlers has increased in the 2000s. In 2005, the Almond Board of California, (the administrative arm of the California Almond Marketing Order) listed 113 almond handlers, up from 97 handlers in 1997. The increase in the number of handlers is likely in response to the increase in production and the steady prices that almonds bring both in the domestic market and from abroad. Among the handlers, Blue Diamond Growers is one of the largest. Blue Diamond is a grower's cooperative that processes and markets almonds. In 2004, it reported that it had 4,000 almond grower members and received about a third of California's crop.

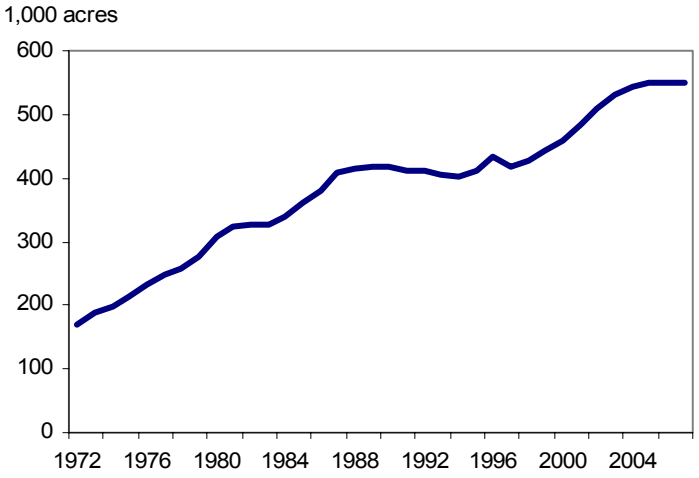
The handlers are responsible for processing and packaging almonds and marketing the final products. Almonds received by handlers must meet quality standards set by the federally administered California Almond Marketing Order that is also responsible for authorizing production research, marketing promotion, and development. Processing almonds, also referred to as manufactured almonds by the industry, include shelling, dry roasting, blanching, slicing, chopping, making them into flour or paste, and flavoring. The natural or processed almonds are then packaged for wholesale or retail. They are shipped shelled, in-shell, in bulk bags, wholesale packs, or retail containers.

Almond Acreage Increased Steadily Since the Early 1920s

The number of almond-bearing acreage has increased at an average annual rate of 3.5 percent since 1919, the first reported almond data by USDA. The number of bearing acres ranged from 35,810 in 1920 to 72,210 by 1929, with rapid increases during the first half of the decade. Another big jump in bearing acreage took place during the mid-1960s through the 1970s, when they increased from 117,250 in 1965 to 324,000 in 1979. The number of bearing acres has continued to increase, but at a slower rate since 1980. The number of almond-bearing acres has remained at 550,000 between 2003 and 2005 (fig. 8).

Figure 8

U.S. almond bearing acreage, 1972-2005



Source: National Agricultural Statistics Service, USDA.

Along with the increase in the number of acres producing the commercial almond crop were improvements in production and harvesting technologies that increased yields. Although yields alternate annually, increasing one year and declining the next as part of the alternate-bearing nature of the trees, overall yields increased an average of 12 percent annually between 1920 and 2003, going from 194 pounds of nuts per acre in 1920 to a record-high 2,000 pounds per acre in 2002.

Almond Grower Prices Increase As Well As Production

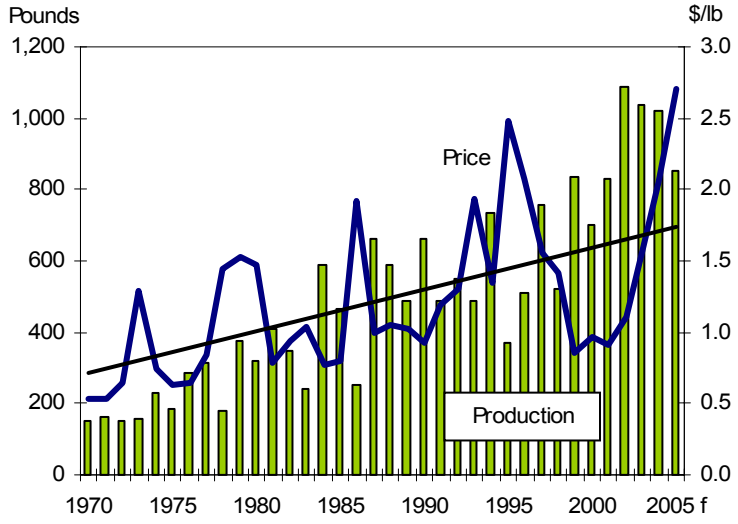
The increase in bearing acreage and yields brought increases in the size of the almond crop until it reached a record 1.09 million pounds in 2002. At the same time, the prices growers receive for their almonds have also been trending upward (fig. 9). Over the past 35 years, almond production grew at an average annual rate of 14 percent, while grower prices grew on average 11 percent annually. During the 1990s, production increased at a more rapid pace than prices. However, since 2000, prices have been increasing 20 percent annually, while production growth has slowed to an average of 6 percent a year. Increasing world demand for U.S. almonds has helped growers maintain strong prices even while they have increased the quantity available in the markets.

Domestic and International Demand for U.S. Almonds Continues To Grow

Demand for U.S. almonds has been growing steadily over the past 35 years in both the United States and in international markets, with growth especially robust since the late 1990s (fig. 10). The almond industry has been very successful at increasing worldwide demand for its products, helping to strengthen grower prices while increasing its production.

Figure 9

U.S. almond production and grower price, 1970-2005



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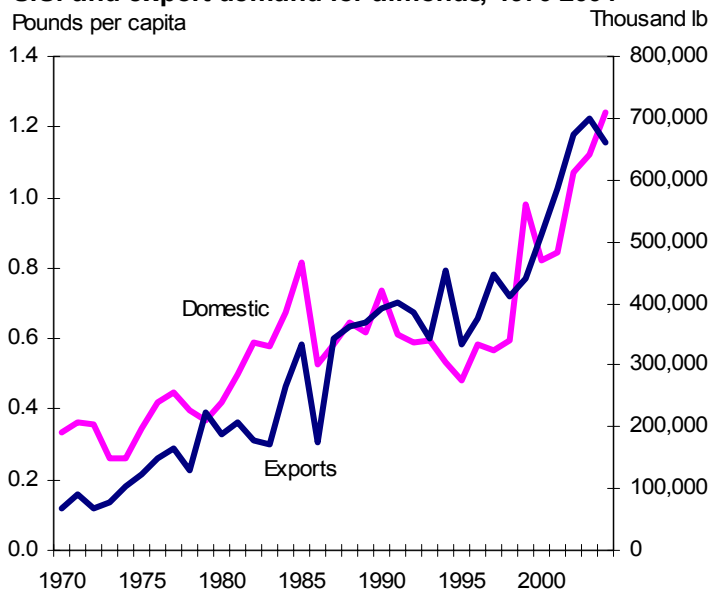
Source: National Agricultural Statistics Service, USDA.

Figure 10

U.S. and export demand for almonds, 1970-2004



Sources: Bureau of the Census, U.S. Dept. of Commerce, and Economic Research Service, USDA.

Americans, on average, are not very big tree nuts consumers. In total, the average American consumed 2.86 pounds of tree nuts in 2003, including all domestic varieties as well as popular imported nuts, such as cashews and brazil nuts. In comparison, during the same year, the average American consumed 6.6 pounds of strawberries (fresh and frozen) and 2.5 pounds of avocados. While almond consumption trails behind that of many fruit, consumers have increased the quantity they consume, especially since 2000. Since 2000, almond per capita consumption has increased at a rate of 11 percent annually.

Of the 2.86 pounds of tree nuts consumed by the average American, almond consumption accounted for 36 percent of the total, more than any of the other domestically produced nuts (hazelnuts, macadamia nuts, pecans, pistachios, and walnuts), but about the same quantity as imported nuts.

Americans consume almonds in many ways. According to data from the Almond Board, more than half the almonds consumed are ingredients in manufactured goods such as candy, cereal, ice cream, granola bars, and cookies. Another quarter of the almonds are purchased at retail either to be used as a snack or for in-home baking and cooking. Another quarter is consumed at the food service level—at restaurants or from bakeries. Domestic demand for almonds is likely to continue to grow in the coming years. With growing evidence of the health benefits of nuts, such as almonds, consumers may increase their demand for almonds for snacking. Another growing use for almonds is as an ingredient in cooking. The growing Middle Eastern population in the United States, whose traditional dishes include almonds as an ingredient, along with the increased interest in international cuisines among the general population, is likely to increase consumer demand for almonds, especially from retail outlets.

With the growing demand for almonds by Americans, the share of the crop going for domestic consumption has increased over the past 10 years from about 20 percent of the crop in 1997/98 to 32 percent in 2004/05. At the same time, export demand has also been growing. The increase in export demand, however, has mostly been met by the increased production, as exports accounted for an average of 60 percent of the crop in 2004/05, relatively unchanged over the previous decade. The international markets during this time, however, have changed. In the mid-1990s, the major market was Germany, followed by Japan and Spain. In the past 2 years, Spain has become the major export market, followed by Germany and India. Other important markets include Italy, France, Canada, the Netherlands, Hong Kong, and Belgium.

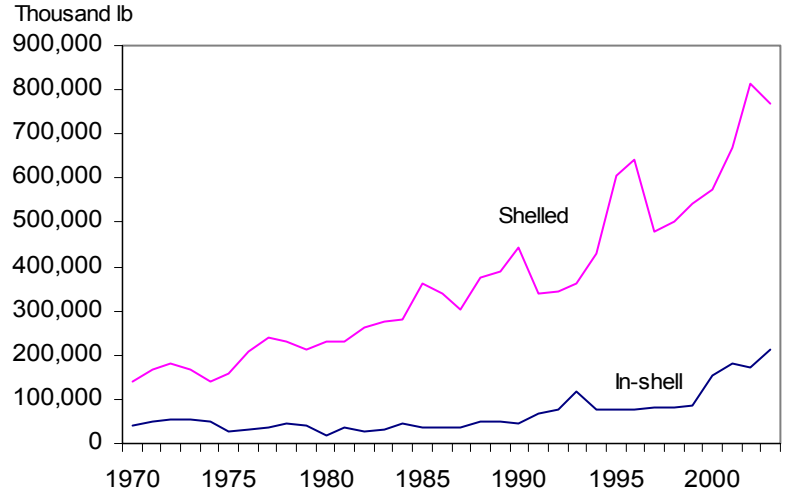
Most of the almonds shipped for export have been shelled; however, those going to India are in-shell. The growth of the Indian market has increased demand for in-shell almonds since 1999; previously demand was relatively flat (fig. 11). Shelled almonds are higher value than in-shell nuts, due to the value added by the handlers, creating another means of boosting grower prices, particularly for those growers who directly benefit from handlers' returns, such as with grower cooperatives.

U.S. Dominates World Almond Market

As the world's biggest producer of almonds, the United States is also the biggest exporter. The U.S. share of the world market has grown in recent years as the size of the domestic crop has increased. In 1994 and 1995, the U.S. crop accounted for half of the world's in-shell almond exports. In 2003, it accounted for three-fourths of all in-shell exports. Syria was the second biggest exporter, with its share of the export market at 4 percent. It was followed by Spain, China/Hong Kong, and Australia.

The major importers of in-shell almonds are usually lower income countries that use almonds in their cooking. India is the number one market for in-shell almonds. Not only are almonds used in Indian cooking, but the country also has an industry for

Figure 11
U.S. almond exports, 1970-2004



Source: Bureau of the Census, U.S. Dept. of Commerce.

shelling the imported almonds and then exporting the processed product. Pakistan, China, and Lebanon are also big markets for in-shell almonds.

The United States also accounts for about three-quarters of the shelled almond exports, maintaining relatively the same share of the world market since 1990. Spain is the second biggest exporter of shelled almonds, accounting for 15 percent of the world market.

At the same time that Spain is the second biggest exporter of shelled almonds, it is also the second biggest importer of shelled almonds, following Germany. Both countries have strong demand for almonds from their confectionary industries. In Germany, almond paste in the form of marzipan is very popular, and imported almonds are used to make the paste. In Spain, high-quality U.S. almonds are imported while Spanish almonds of lower value are exported.

U.S. Industry Stabilizing for the Time Being

The U.S. almond industry appears to be stabilizing for the time being. The number of bearing acres has remained constant between 2003 and 2005, and there are fewer nonbearing acres in the past few years than there have been in many years. Generally higher yields in recent years have allowed the industry to produce big crops with the quantity of acres presently planted.

The industry has historically gone through slow growth phases after rapid expansion, and it is presently in such a phase. With increasing domestic demand and strong export markets, almond grower prices are likely to continue to stay strong in the foreseeable future. Returns are likely to stay among the highest in the fruit and tree nut industry.

With 2005 forecast to be the third consecutive year of declining production, grower prices are likely to increase above the past few years. In turn, there may be an increase in acreage planted to almond trees as growers respond to the higher prices. In the future, however, competition from other produce industries, especially tree fruit, and from developers, will likely dampen the industry's ability to expand acreage. Competition from other countries is also likely to increase as producers in places like Australia and Chile see the prices growers receive in the United States and increase their almond tree plantings. The U.S. industry, however, has a very good reputation worldwide for its high quality almonds, and almonds will remain among the most profitable horticultural crops produced in the United States.

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